

**A STUDY ON THE RECESSION AND RESURGENCE OF THE 2008
GLOBAL SUB PRIME CRISIS**

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Abstract

The present study analyzes the comparison of world stock indices before and after the recession. Recession leads to financial incapability, thus, the study intends to know if the world has recovered from it or not. The study is a comparison between the North and South America, Europe and Asia exchange indices to that of BBC Global 30 (World Stock Market index of 30 of the largest companies by stock market value in Europe, Asia and America). The period taken is (2006-2008) to (2008-2010) i.e., a comparison before and after the recession. The world market indices which are taken into consideration are S & P 500 (US), Mexican Bolsa (Mexico), Brazil Bovespa (Brazil) from North and South America, FTSE 100 (UK), DAX 30 (Germany), CAC 40 (France) from Europe and Shanghai Composite (China), BSE Sensex (India), Hang Seng (Hong kong), Nikkei 225 (Japan) from Asia.

I. INTRODUCTION

The global financial crisis started with bursting of October 2008 US financial bubble which is not an isolated phenomenon; rather it is deeply linked to the recession of US economy following the boom in November 2007. The U.S. recession that began in December 2007 has cast its long shadow on the economic fortunes of many countries, resulting in what has often been called the 'Great Recession'. This started as seemingly isolated turbulence in the sub-prime segment of the US housing market and mutated into a full blown recession by the end of 2007. The old proverbial truth that the rest of the world sneezes when the US catches a cold appeared to be vindicated, as systemically important economies in the European Union and Japan went collectively into recession by mid-2008.

On October 24 2007, many of the world's stock exchanges experienced the worst declines in their history; and the currencies US Dollar and Japanese Yen soared against other major currencies, particularly the British Pound and Canadian Dollar, as world investors sought safe havens. Later that day, the deputy governor of the Bank of England, Charles Bean, said that "This is a once in a lifetime crisis, and possibly the largest financial crisis of its kind in human history"^a. By March 9th, 2009 the DJIA had dropped by 54% to 6469 (before beginning to recover) from its peak of 14164 on October 9th, 2007, a span of 17 months^b.



Source: <http://static.businessinsider.com/image/4c385ec87f8b9acc6d8d0700-590/but-well-keep-our-fingers-crossed-and-pray-for-that-v-shaped-recovery.jpg>

Figure 1
2008 Global Sub Prime Crisis: Its Recession and Recovery

1. 1Causes for Stock Market Crash-2008

- Corporate Corruption.
- Overvalued Stocks.
- Mortgage crisis.
- Over unregulated financial institutions.
- Unregulated big speculators playing short.
- Credit crunch - shortage of finance.
- Falling house prices - related to shortage of mortgages and credit crunch.
- Costs push inflation squeezing incomes and reducing disposable income.
- Collapse in confidence of finance sector causing lower confidence amongst 'real economy'.

1. 2 Reasons for Stock Market Recovery-2008

- Thawing of the credit markets.
 - Some improvement in the financial sector.
 - Yield curve (in recovery zone) and Ted spread (not yet).
- Keynesian Economics.
 - Massive stimulus packages by Obama and rest of world.
- China recovery underway.
- Lower oil and commodity prices.
 - Stimulates aggregate supply.

II. NEED AND IMPORTANCE

Stock exchanges are organized and regulated markets for various securities issued by corporate sector and other institutions. Stock exchanges construct stock indices which act as an effective barometer and gauge the prevalent stock market sentiment and behavior. These indices fluctuate and react to the economic condition prevailing in the country and in the world. On the stock exchange, share prices rise and fall depending largely, on the market forces. Share prices tend to remain stable or rise when companies and the economy in general show signs of stability and growth. When the economy reaches a Boom the stock indices show sharp increase in their values and during Recession show a decline. An economic recession, depression, or financial crisis could eventually lead to a stock market crash^c. Therefore the movement of share prices and in general of the stock indices can indicate the general trend of an economy^d.

Most of the studies on stock markets/Indices are restricted only to either recession of stock markets or their recovery. In this context a need is felt to study the recession and recovery of a particular stock market crash. This would help us to analyze the reasons for the crash and the factors that have enabled it to recover. Furthermore it would also facilitate us to know the period taken for the recovery and the percentage of recovery. Since the 2008 Global Sub Prime Crisis is the most recent major stock market crash, it was selected for the study. The present investigation also attempted to compare and correlate the world stock indices with that of BBC Global 30 index in situations of boom, crash and recovery in order to know whether the popular world indices move in the same way at all phases.

BBC Global 30 index is constructed by FTSE exchange (England), by taking into consideration the stocks traded throughout the world and act as a global indicator. This index is not traded and exclusively used as a benchmark. It is considered as the indicator for global indices

III. OBJECTIVES

- 1) To study the 2008 Global Sub Prime Crisis
- 2) To identify the causes of crisis and factors responsible for resurgence.
- 3) To find out whether the selected world indices are moving in accordance to BBC Global 30 index.
- 4) To know the percentage of recovery of the selected indices
- 5) To analyze the volatility of selected indices during their recession and resurgence.

IV. METHODOLOGY

The present study is completely based on secondary data and majority was gathered from the internet. The data collected is processed and analyzed using SPSS software.

4.1 SAMPLE DESIGN

The selection of world stock indices as a sample for the study is based on the indices considered by CNNmoney.com. It has considered four continents to represent the world markets. They are North & South America, Europe and Asia. The world market indices which are taken into consideration are S & P 500 (US), Mexican Bolsa (Mexico), Brazil Bovespa (Brazil) from North and South America, FTSE 100 (UK), DAX 30 (Germany), CAC 40 (France) from Europe and Shanghai Composite (China), Hang Seng (Hong kong), Nikkei 225 (Japan) from Asia. These indices are compared with BBC Global 30 index.

The 'BBC Global 30' is a worldwide stock market index, run as a global economic barometer. Started by the BBC on 29 September 2004, it mixes the economic information of 30 of the world's largest companies based in four continents. So far it has proved to be very volatile, as many of the companies have had major gains and losses.



Figure 2

Figure showing the sample of Indices

4.2 DATA

The index prices have been taken from the websites www.gcitrading.com, www.googlefinance.com, www.yahoofinance.com

V. STUDY PERIOD

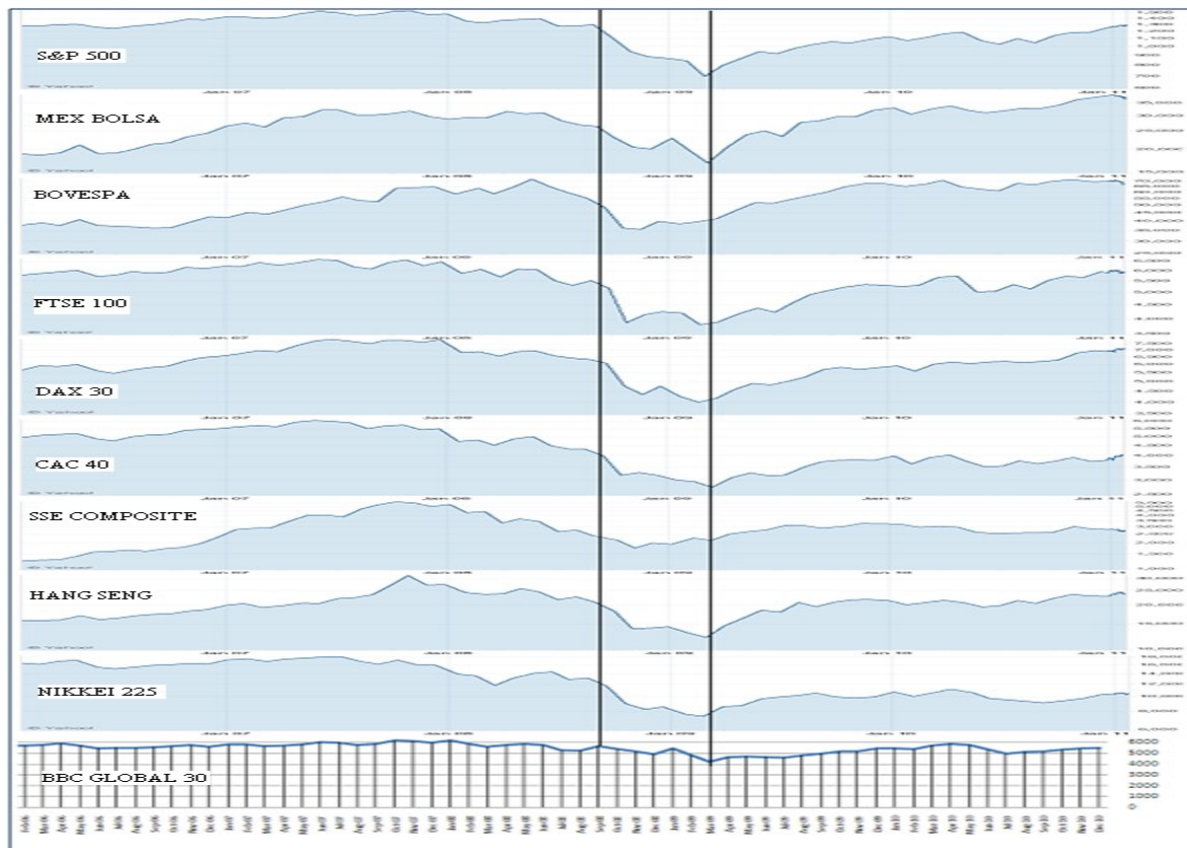
The study period is from Jan'2006 to Dec'2010 to compare stock market behavior i.e., before and after the recession which occurred in September 2008.

VI. LIMITATION: The data collected is entirely secondary in nature.

VII. ANALYSIS

7.1 ANALYSIS BASED ON GRAPHS

It is proposed to analyze the world stock indices to determine their level of resurgence after the 2008 crash. For this purpose the following world indices were chosen. From North & South America (a) S&P 500 (b) Mex Bolsa (c) BOVESAPA, from Europe (a) FTSE 100 (b)DAX 30 (c)CAC 40 and from Asia (a)SSE Composite (b)HANG SANG (c)NIKKEI 225. Finally BBC GLOBAL 30 index was taken as a standard to compare the above indices.



Source: www.yahoofinance.com, www.ftse.com (graphs are drawn based on the adjusted closing values of the indices)

Figure 3
Comparison of world stock indices with BBC Global 30

It took the entire history of the world until 1999 to create the first \$35 trillion of stock market wealth; and then more than that amount of wealth was created (\$38.2 trillion) in just the most recent five-year period from 2002-2007! Not a bad record for wealth creation, largely because of globalization and the most significant spread of free market capitalism in history.

According to data released by the World Federation of Exchanges, global stock market capitalization reached a new record of \$60 trillion in 2007^e. The increase in stock market value of \$10 trillion during the year also established a new all-time record for the largest annual increase of global stock market wealth in history, beating the previous record of a \$9.66 trillion increase in 2006. The enormous creation of wealth on account of capitalism expanding globally has turned out to be an illusion, diminishing daily like a snowflake over a campfire.

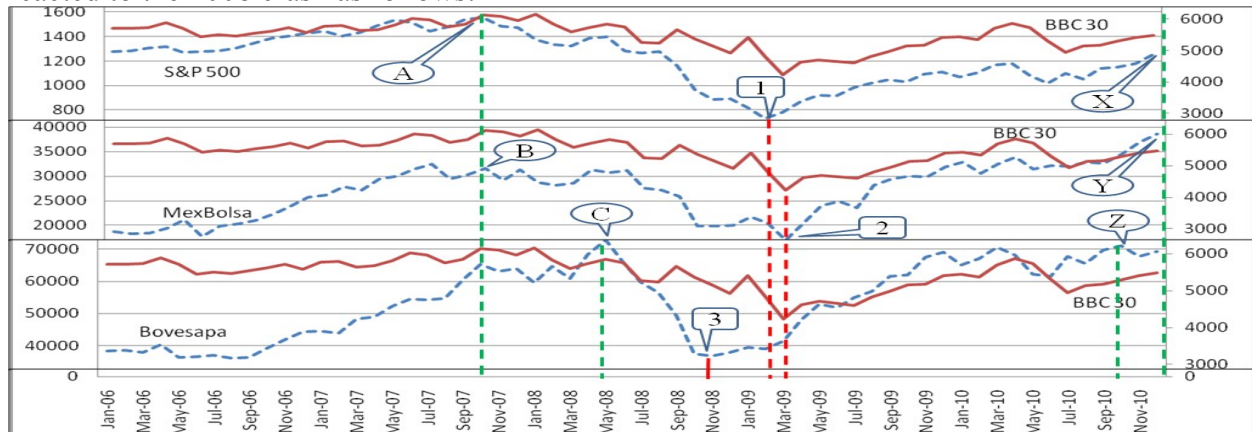
From the above graph it is clearly seen that the steep downturn in almost all the indices has started during September 2008 and reached to its bottom in between November 2008 to March 2009. The BBC Global 30 has represented its low in March '09, after which almost all the indices in the world have started recovering along with BBC Global 30.

The BBC Global 30 indicates resurgence by the end of April '10; its resemblance can be seen in only two indices i.e. Mexican Bolsa of Mexico and Bovespa of Brazil but, the remaining stock indices are still on their way to resurgence.

BBC Global 30 index is constructed by FTSE exchange (England), by taking into consideration the stocks traded throughout the world and act as a global indicator. This index

is not traded and exclusively used as a benchmark. This index is considered as the indicator for global indices. During recession it has crashed by 1916 points (from October 2007 to March 2009) and stood at 4220 points as on March 2009. It has fallen by 31% from its previous high of 6136 as on October 2007. The recovery has started in March 2009 and has taken almost one year to reach 5854 points high. This is almost 95% recovery when compared to its previous high of 6136.

The North & South American stock indices S&P 500, Mexican Bolsa and Bovespa have reacted to the 2008 crash as follows:



The X-axis indicate time period, Y-axis on right hand side indicate BBC values for three sets of graphs, Y-axis on left hand side indicate values of individual indices.

Points A,B & C represent the previous high values of indices before crash, 1,2 & 3 indicate the lowest points after the 2008 crash and X,Y & Z show the recovery points.

Source: www.yahooofinance.com, www.ftse.com (graphs are drawn based on the adjusted closing values of the indices)

Figure 4

Comparison of North and South American indices

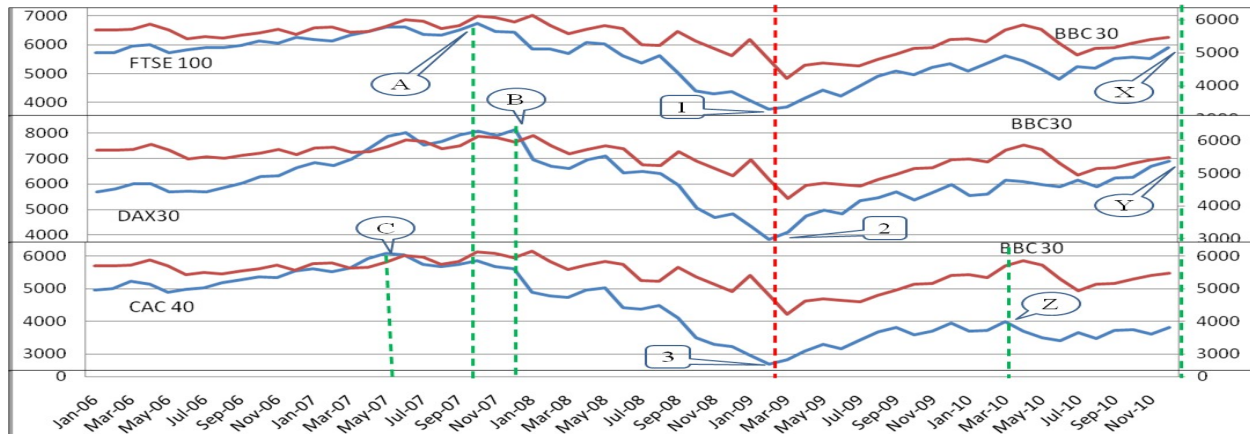
From the above graph it is observed that before 2008 global crash, the BBC Global 30 index S&P 500 have recorded their high in October 2007, Mexican Bolsa in July 2007 and Bovespa in May'08 before recession. From these high values the indices turned downward and started going down after Sep'08. This is because of the failures of large financial institutions and subprime lending in United States. The shock spread throughout the globe, due to which the indices crashed to the low taking some time of three to four months.

--The S&P 500 index has crashed by 818 points i.e. by 53% from its previous high of 1553 in Oct'07 to that of 735 on Feb'09. The crash was really severe after May'08. The recovery has started early in Feb'09 where as BBC 30 has started in March'09. Despite the very big gain, the S&P 500 is more than 19% (almost 81% recovery) below the peak value by the end of December 2010.

--Mexican Bolsa of Mexico crashed by 15368 points that is by 47% from its peak of 32411 in July'07 to that of 17,043 on March'09. The crash was not that steep but the recovery is a slope and at the end of the year Dec'10 it has recovered by 119% from its previous peak value in July '07 and stood at 38511 at the end of Dec'10.

--Bovespa of Brazil had a sharp bearish movement from May'08 till Oct'08 and has fallen by 35820 points that is almost 49% crash with in a period of five months and started recovery from Oct'08. The recent highest value of the index is 70915 in Oct'10 that is after two complete years. It has almost recovered by 97%.

The popular indices of Europe that is FTSE 100, DAX 30 & CAC 40 were almost moving along with BBC Global 30.



The X-axis indicate time period, Y-axis on right hand side indicate BBC values for three sets of graphs, Y-axis on left hand side indicate values of individual indices.

Points A,B & C represent the previous high values of indices before crash, 1,2 & 3 indicate the lowest points after the 2008 crash and X,Y & Z show the recovery points.

Source: www.yahooofinance.com, www.ftse.com (graphs are drawn based on the adjusted closing values of the indices)

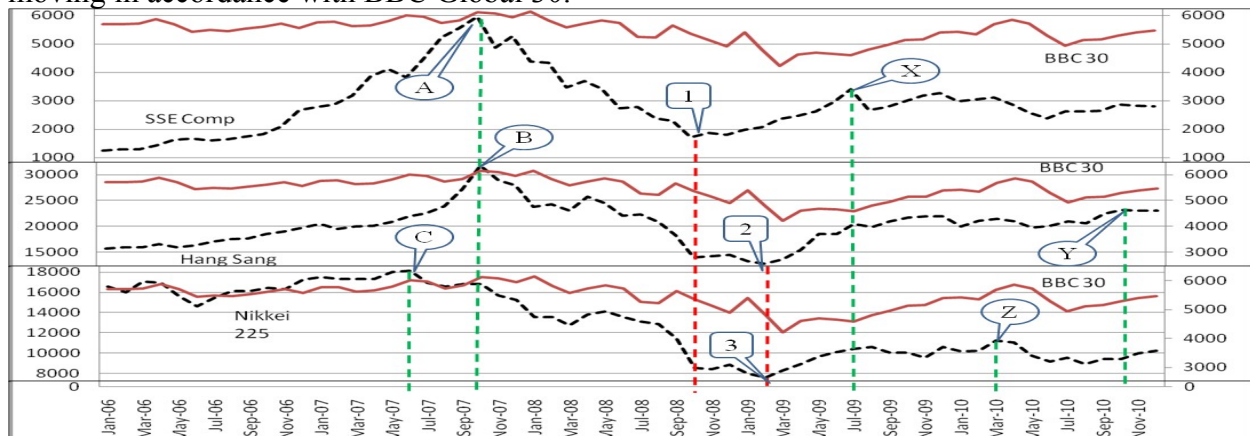
Figure 5
Comparison of Europe indices

--The FTSE 100 index from its previous high of 6749 on Oct'07 has declined by 2974 points that is 44% crash by the end of February 2009 and stood at 3775. The recovery of the index is along with BBC 30 index and reached to a high of 5899 in Dec'10 that is almost 87% of recovery as compared to its peak value in October 2007.

--The DAX 30 of Germany has recovered a previous high of 8141 in Dec'07 and crashed to bottom of 3825 in Feb'09 that is decline by 53% and started recovery from Feb'09. It reached to 6914 on Dec'10 that is a recovery to the extent of 85% as compared to its previous high in Dec'07.

--The CAC 40 index of France has its previous high of 6082 in May'07 and declined to 2678 on Feb'09 that a decline of 56% from its high. From then it started the journey towards the recovery which is of course along with the BBC Global 30 and reached to a recent high of 3977 in March'10 that is a recovery of 65%.

The Asian indices like SSE Composite, Hang Seng & Nikkei 225 are not exactly moving in accordance with BBC Global 30.



The X-axis indicate time period, Y-axis on right hand side indicate BBC values for three sets of graphs, Y-axis on left hand side indicate values of individual indices.

Points A,B & C represent the previous high values of indices before crash, 1,2 & 3 indicate the lowest points after the 2008 crash and X,Y & Z show the recovery points.

Source: www.yahooofinance.com, www.ftse.com (graphs are drawn based on the adjusted closing values of the indices)

Figure 6
Comparison of Asian indices

--The SSE Composite index of China recorded its previous high to 5955 in Oct'07 and with one year it has reached to low of 1729 in Oct'08 that is almost 71% decline and started recovery from Oct'08 quite early to BBC Global 30 and has only recovered by 57% as noted with the recent high in July'10.

--The Hang Seng index of Hong Kong recorded its previous high to 31695 on Oct'07 and reached to the low of 12704 on Feb'09 that is a decline by 60%. The recent high is 23135 in Oct'10 that is recovery of almost 73%.

--The Nikkei 225 of Japan recorded its high of 18145 on June'07 and has fallen to 7562 on Feb'09 that is a decline by 58% and the recovery has started from Feb'09. It reached its high of 11195 in March'10 that is the recovery of almost 62%.

7.2 ANALYSIS BASED ON CORRELATION BEFORE & AFTER RECESSION

7.2.1 CORRELATION OF INDICES DURING THE STUDY PERIOD

Table I
Correlation Matrix of Indices based on monthly data from 2006 - 2010

	BBC 30	S&P 500	MEX BOLSA	BOVESPA	FTSE 100	DAX 30	CAC 40	SSE COMP	HANG SANG	NIKKEI 225
BBC 30	1.00									
S&P 500	0.83	1.00								
MEX BOLSA	0.26	0.26	1.00							
BOVESPA	0.08	0.08	0.90	1.00						
FTSE 100	0.81	0.97	0.34	0.15	1.00					
DAX 30	0.76	0.91	0.55	0.38	0.91	1.00				
CAC 40	0.78	0.97	0.07	-0.13	0.93	0.84	1.00			
SSE COMP	0.35	0.46	0.67	0.62	0.47	0.72	0.37	1.00		
HANG SENG	0.46	0.58	0.77	0.77	0.61	0.80	0.43	0.86	1.00	
NIKKEI 225	0.73	0.91	-0.09	-0.28	0.86	0.71	0.97	0.21	0.26	1.00

Source: www.yahoofinance.com, www.ftse.com (calculations are based on adjusted closing values of the indices)

--During the study period it is observed that the indices S&P 500 (83%), FTSE 100 (81%), DAX 30 (76%), CAC 40 (78%) & Nikkei 225 (73%) are highly in correlation with BBC Global 30 index. Comparatively the other indices Bovespa (8%), Mex Bolsa (26%), SSE Composite (35%) and Hang Seng (46%) are low in their correlation with BBC Global 30 index.

--There is high correlation between S&P 500 index & European indices. There is 97% correlation between S&P 500 & CAC 40 and one index from Asia that is Nikkei 225 correlates to the extent 91% with the movement of S&P 500 index. The relation between S&P 500 & Mex Bolsa is only 26% and with that of Bovespa is only 8%.

--Mex Bolsa index has highest correlation (90%) with Bovespa and has negative correlation (-9%) with Nikkei 225 index.

--The Bovespa negatively correlates with Nikkei 225 (-28%) and CAC 40 (-13%).

--The FTSE index along with S&P 500 highly correlates with DAX 30(91%), CAC 40 (93%), Nikkei 225(86%), Hang Seng(61%) and only 47% with SSE composite Index and 15% with Bovespa Index.

--The DAX 30 index along with FTSE 100 & S&P 500 correlates to the maximum of 84% with CAC 40, 72% with SSE Composite, 80% with Hang Seng & 71% with Nikkei 225 and 38% with Bovespa.

--The CAC 40 in spite of 97% relation with S&P 500 & Nikkei 225 also has 93% relation with FTSE 100 & 84% with DAX 30.

--The SSE Composite highly correlates with Hang Seng correlates less with Nikkei 225.

7.2.2 CORRELATION OF INDICES DURING RECESSION PERIOD

Table II
Correlation of the indices during RECESSION

	BBC 30	S&P 500	MEX BOLSA	BOVESPA	FTSE 100	DAX 30	CAC 40	SSE COMP	HANG SENG	NIKKEI 225
BBC 30	1.00									
S&P 500	0.83	1.00								
MEX BOLSA	0.80	0.94	1.00							
BOVESPA	0.81	0.94	0.97	1.00						
FTSE 100	0.88	0.98	0.94	0.94	1.00					
DAX 30	0.87	0.97	0.88	0.90	0.97	1.00				
CAC 40	0.88	0.96	0.89	0.91	0.97	0.99	1.00			
SSE COMP	0.75	0.75	0.68	0.70	0.79	0.81	0.83	1.00		
HANG SENG	0.85	0.96	0.93	0.95	0.97	0.96	0.96	0.81	1.00	
NIKKEI 225	0.80	0.96	0.92	0.94	0.94	0.93	0.91	0.70	0.95	1.00

Source: www.yahooofinance.com, www.ftse.com (calculations are based on adjusted closing values of the indices)

--During the recession period of the 2008 crash the correlation was measured between the indices along with the standard index BBC Global 30.

--It is observed that the least correlation (68%) was between Mex Bolsa & SSE composite and the maximum correlation was (99%) between DAX 30 & CAC 40.

--BBC Global 30 index correlates from 75% to 88% with all the indices considered which implies that all the indices are almost moving along with the BBC Global 30.

7.2.3 CORRELATION OF INDICES DURING RECOVERY PERIOD

Table III
Correlation of the indices during RECOVERY phase

	BBC 30	S&P 500	MEX BOLSA	BOVESPA	FTSE 100	DAX 30	CAC 40	SSE COMP	HANG SENG	NIKKEI 225
BBC 30	1.00									
S&P 500	0.79	1.00								
MEX BOLSA	0.73	0.99	1.00							
BOVESPA	0.67	0.96	0.98	1.00						
FTSE 100	0.86	0.97	0.95	0.93	1.00					
DAX 30	0.79	0.98	0.97	0.94	0.96	1.00				
CAC 40	0.83	0.97	0.96	0.93	0.98	0.98	1.00			
SSE COMP	0.31	0.77	0.83	0.85	0.68	0.75	0.69	1.00		
HANG SENG	0.63	0.96	0.98	0.97	0.91	0.94	0.92	0.88	1.00	
NIKKEI 225	0.47	0.85	0.87	0.83	0.75	0.86	0.80	0.81	0.90	1.00

Source: www.yahooofinance.com, www.ftse.com (calculations are based on adjusted closing values of the indices)

During the recovery phase in the year 2009 the correlation of indices with that of BBC Global 30 ranges from 31% to 86%, which indicates that some of the indices are less correlated with BBC30. The SSE Composite index has only 31% correlation where as Nikkei225 correlates 47% and others are above 50% relation with BBC Global 30. The highest correlation of 86% is with FTSE 100 & 83% with CAC 40.

7.3 ANALYSIS BASED ON RETURNS

7.3.1 ANALYSIS BASED ON RETURNS DURING RECESSION

Table IV
RETURN ON INDICES DURING RECESSION

(figures in percentage)

Date	North & South American Indices				European Indices			Asian Indices		
	BBC 30	S&P 500	BOLSA	BOVESPA	FTSE 100	DAX 30	CAC 40	SSE COMP	HANG SENG	NIKKEI 225
Oct-	-0.76	-4.43	-7.55	-3.54	-4.25	-2.28	-2.95	-18.19	-8.88	-6.68
Nov-	-2.31	-0.60	7.24	1.40	-0.09	3.09	-1.21	8.00	-3.34	-3.02
Dec-	3.36	-6.79	-8.14	-6.94	-9.31	-14.64	-12.86	-16.69	-15.12	-10.97
Jan-	-5.21	-3.07	-1.87	8.62	0.20	-3.69	-2.47	-0.80	2.17	0.01
Feb-	-4.26	-0.66	1.51	-5.69	-2.56	-1.20	-1.09	-20.14	-4.97	-6.25
Mar-	2.56	4.66	9.40	12.27	6.33	5.11	4.92	6.35	11.88	8.36
Apr-	2.12	0.88	-2.01	6.39	-0.56	2.31	1.16	-7.03	-5.04	2.29
May-	-1.79	-8.10	1.55	-9.71	-6.96	-9.23	-11.85	-20.31	-10.04	-4.11
Jun-	-8.30	-1.56	-11.35	-8.92	-4.50	0.54	-0.98	1.45	1.04	-3.18
Jul-	-0.82	1.09	-1.75	-5.63	4.77	-1.05	2.31	-13.63	-6.48	-1.64
Aug-	8.25	-9.15	-4.53	-12.59	-10.15	-7.27	-8.18	-4.32	-12.30	-11.48
Sep-	-5.04	-16.36	-23.16	-23.71	-12.60	-14.78	-14.97	-24.63	-23.43	-25.56
Oct-	-4.13	-8.60	-0.20	-1.93	-2.51	-7.72	-6.17	8.24	1.41	-1.10
Nov-	-4.62	1.04	1.09	2.71	1.88	3.24	-1.74	-2.69	1.80	5.16
Dec-	10.09	-8.25	8.27	3.96	-6.77	-10.38	-8.20	9.33	-8.29	-9.78
Jan-	-10.92	-10.75	-5.99	-1.01	-7.75	-11.73	-9.45	4.63	-3.83	-4.96

Source: www.yahoofinance.com, www.ftse.com (calculations are based on adjusted closing values of the indices)

Return indicates the percentage change in value between two periods. The above table shows the return on indices from October 2007 to February 2008. The starting date being the date on which most of the indices started declining along with BBC Global 30 after recording the high and from January 2009 all the indices end up with negative return and turns positive in almost all the indices.

From October 2007 all the indices show a negative return indicating the start of recession and continued in the next months excepting March 2008. During the crash period that is August and September 2008 the quantum of loss is more indicating sharp decline in the values of the indices.

7.3.2 ANALYSIS BASED ON RETURNS DURING RECOVERY

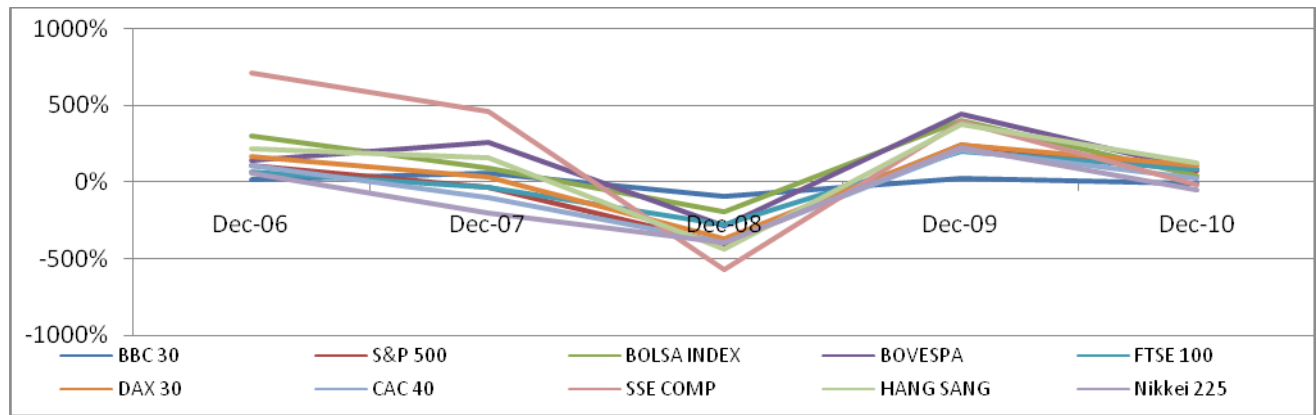
Table IV
RETURN ON INDICES DURING RECOVERY

(figures in percentage)

		North & South American Indices			European Indices			Asian Indices		
Date	BBC	S&P	BOLS	BOVESP	FTSE	DAX	CAC	SSE	HANG	NIKKEI 225
Feb-	-12.26	6.71	-16.61	6.59	2.30	7.23	4.73	13.94	6.44	9.43
Mar-	9.29	10.91	20.46	15.88	7.59	16.02	10.20	4.40	13.77	7.67
Apr-	1.81	6.33	17.32	9.69	6.86	4.72	6.63	6.27	20.11	8.53
May	-0.91	-0.76	3.44	-1.86	-4.73	-3.26	-4.46	12.40	-0.32	4.03
Jun-	-1.35	7.22	-5.05	5.76	7.99	10.73	8.75	15.30	10.58	3.08
Jul-	4.85	3.99	19.12	3.61	7.55	2.64	7.14	-21.81	-2.97	1.91
Aug-	3.13	2.74	4.50	8.35	3.85	3.82	3.69	4.19	5.72	-5.49
Sep-	3.67	-1.87	2.01	0.47	-2.59	-5.33	-6.20	7.79	3.51	0.12
Oct-	0.23	6.27	-0.57	8.94	4.95	5.05	3.50	6.66	1.45	-5.05
Nov-	4.75	1.32	6.81	2.40	2.82	5.61	6.62	2.56	-0.03	11.16
Dec-	0.44	-3.47	3.11	-5.65	-4.94	-6.96	-6.22	-8.78	-8.95	-3.60
Jan-	-1.37	3.43	-6.88	2.86	4.86	0.81	0.32	2.10	5.09	0.25
Feb-	6.38	5.25	5.90	5.20	5.26	9.99	7.34	1.87	2.21	9.75
Mar-	2.82	1.44	4.33	-3.33	-3.02	-1.11	-7.00	-7.67	-2.65	-1.36
Apr-	-2.24	-8.58	-6.95	-8.87	-5.26	-2.02	-5.40	-9.70	-5.95	-12.07
May	-7.49	-5.82	2.02	-0.77	-6.89	-1.04	-3.16	-7.48	2.24	-5.61
Jun-	-6.83	7.80	-0.37	9.91	9.06	4.41	7.69	9.97	4.44	4.04
Jul-	3.97	-3.73	2.86	-3.23	-0.76	-4.42	-4.91	0.05	-2.30	-6.58
Aug-	0.61	7.61	-0.89	6.22	6.07	5.79	7.07	0.64	8.97	5.13
Sep-	2.52	1.47	5.64	1.84	0.89	0.65	0.44	8.43	3.63	0.37
Oct-	2.52	3.69	6.71	1.79	2.28	5.98	3.18	12.17	3.30	-1.78
Nov-	2.09	-0.23	3.51	-4.20	-2.59	1.32	-5.82	-5.33	-0.38	7.98
Dec-	1.40	6.53	4.71	2.36	6.72	3.37	5.38	-0.43	0.12	2.94

Source: www.yahoofinance.com, www.ftse.com (calculations are based on adjusted closing values of the indices)

The above table shows the return on indices from March 2008 to December 2010. The starting date being the date on which all the indices started recovery along with BBC Global 30 and from then in almost all the months the returns are positive excepting some of them. In the months of February, August, September and October 2010 the quantum of positive return is more indicating the recovery.



Source: www.yahoofinance.com, www.ftse.com (graphs are drawn based on the adjusted closing values of the indices)

Figure 7

Graph showing yearly Returns of Indices

The yearly returns of all the ten sample indices from the year 2006 – 2010 show a dip during the crash period in 2008 indicating negative returns and rise of the returns in the year 2009, this shows that the global indices almost move in the same direction.

7.4 ANALYSIS BASED ON VOLATILITY OF INDICES

7.4.1 ANALYSIS BASED ON STANDARD DEVIATION OF INDICES DURING RECESSION

Table V
Standard Deviation of Indices during RECESSION:

	BBC 30	S&P 500	MEX BOLSA	BOVESPA	FTSE 100	DAX 30	CAC 40	SSE COMP	HANG SENG	NIKKEI 225
Oct-07	91	18	492	1357	83	63	56	175	1304	346
Nov-07	131	31	768	1728	136	125	105	301	1308	561
Dec-07	98	19	710	1653	98	90	80	144	897	309
Jan-08	226	38	939	2728	262	483	291	405	1688	582
Feb-08	65	17	706	1947	105	123	90	146	655	423
Mar-08	78	30	1161	1748	136	152	128	318	1038	454
Apr-08	57	26	574	2697	103	152	92	167	860	369
May-08	98	17	347	1786	131	87	75	115	559	225
Jun-08	151	37	735	3143	144	181	160	217	683	474
Jul-08	60	20	446	2165	94	129	107	72	534	227
Aug-08	114	21	419	2240	103	120	87	124	436	358
Sep-08	182	94	1938	5218	305	260	177	111	1362	1338
Oct-08	236	41	1410	2722	222	256	166	102	1083	584
Nov-08	153	40	1000	2027	138	195	136	69	984	282
Dec-08	107	16	401	1323	62	63	63	72	515	135

Source: www.yahoofinance.com, www.ftse.com (calculations are based on adjusted closing values of the indices)

Standard deviation is an exact measure of risk which measures the degree of volatility. From the above table it is observed that Standard deviation is gradually increasing during October 2007 to January 2008 indicating increase in volatility during recession period and it is high in all the indices during September 2008 indicating high volatility due to subprime bubble crash.

7.4.2 ANALYSIS BASED ON STANDARD DEVIATION OF INDICES DURING RECESSION

Table VI

Standard Deviation of Indices during RECOVERY

	BBC 30	S&P 500	MEX BOLSA	BOVESPA	FTSE 100	DAX 30	CAC 40	SSE COMP	HANG SENG	NIKKEI 225
Jan-09	191	39	1353	1417	196	290	185	47	977	466
Feb-09	177	42	831	1430	167	276	147	99	357	243
Mar-09	182	50	1303	1943	145	187	119	98	817	553
Apr-09	40	18	705	1293	91	156	81	58	533	143
May-09	98	14	489	1159	58	87	45	34	567	147
Jun-09	73	17	587	1464	88	143	87	79	374	151
Jul-09	129	40	1347	2058	171	268	145	129	1095	312
Aug-09	94	14	312	788	95	102	91	233	359	133
Sep-09	139	24	639	2028	125	142	92	106	614	150
Oct-09	68	22	867	2087	83	131	83	67	645	233
Nov-09	91	22	672	1370	97	135	73	78	555	223
Dec-09	56	11	292	879	69	105	62	79	449	272
Jan-10	110	25	1002	2108	132	174	117	98	841	243
Feb-10	72	18	564	1526	97	86	73	51	395	159
Mar-10	86	19	463	889	75	126	60	52	244	307
Apr-10	64	11	433	2075	76	59	87	144	460	230
May-10	192	40	674	2137	144	169	141	52	451	370
Jun-10	77	25	728	1476	104	127	100	81	503	304
Jul-10	126	27	488	2086	156	123	106	83	439	161
Aug-10	91	29	549	1260	91	131	100	35	384	227
Sep-10	93	21	355	1324	74	127	93	134	548	182
Oct-10	68	14	479	991	53	152	62	81	347	157
Nov-10	71	15	428	1329	101	86	58	33	700	161
Dec-10	81	15	296	1119	97	107	97	53	247	109

Source: www.yahoofinance.com, www.ftse.com (calculations are based on adjusted closing values of the indices)

During the starting stage of recovery that is in the months of January, February, March 2009 the volatility is more as this is the period during which the recovery phase have started in all the indices. In the year 2010 the volatility of indices is relatively high as a result all the indices show the recovery after the crash.

VIII. FINDINGS

The global financial crises started with bursting of October 2008 U.S. financial bubble which led to the recession and immediately spread to the rest of world.

From this study on “Resurgence of world stock indices”, it is observed that almost all the indices have started to decline from September 2008 and reached the bottom between November 2008 and March 2009. The BBC Global 30 has represented its low in March 2009. Subsequently from then onwards almost all the indices in the world have started recovering along with it.

During the period of recession all the world indices highly correlated with BBC Global 30(i.e. Between 75% - 88%) among which FTSE 100 and CAC 40 have high correlation. The correlation between all the other indices was also high. During resurgence phase the correlation ranged from 31% to 86%, among which a high correlation is noticed with Europe indices, low correlation with Asian indices and above moderate correlation with North and South American indices.

The BBC Global 30 showed maximum resurgence (95%) in the end of April 2010. Compared to this the resurgence percentage is more in only two indices which are Mex Bolsa(119%) and Bovespa(97%). The remaining indices are still on their way to complete their resurgence.

Among the North and South American indices the S&P 500 has recovered the maximum i.e. by 81%. When the European indices are considered, it is noticed that FTSE 100 has resurged the maximum by 87% followed by DAX 30 (85%) and CAC 40 (65%). Among the Asian indices SSE Composite of China crashed by 71% and started recovery too early in October 2008 than BBC Global 30 and has recovered only by 57% by the end of 2010. Hang Seng has recovered by 73% from its crash where as Nikkei 225 of Japan recorded a recovery of 62% by the end of 2010.

The Return on indices is negative from October 2007 indicating the start of recession and the quantum of loss is more during the crash period that is during August and September 2008. This indicates a sharp decline in the values of the indices along with BBC Global 30. From January 2009 all the indices ended up with negative return and turned positive. The positive return is high during the beginning of the years 2009, 2010 (i.e. Feb’ 09, March’ 09 and Feb’ 10) and also during the end of the year 2010 (Aug, Sep and Oct’ 10).

It is observed that Standard deviation of indices gradually increased during October 2007 to January 2008 indicating an increase in volatility during recession and is high in all indices during September 2008 during the time of the crash. During the beginning of the year 2009 (January, February, March) the volatility is more as this was the period during which the recovery has started in all the indices. In the year 2010 the volatility of indices is relatively high in all the indices. This is due to the fact that all the indices are on their way to complete recovery.

IX. CONCLUSION

The stock indices of a country are one of the important indicators of its economy. During the stock market crash there would be an economic slowdown indicating recession; subsequently the bullish trend over a period brings the stock indices to their normalcy representing the recovery and thereby improving the economic situation.

From the study it is learnt that as the BBC Global 30 index shows 95% resurgence from the crash, we can say that the world economy has recovered to that extent. When it comes to the sample countries taken for the study, recovery is complete in Mexico (Mexican Bolsa). It is 97% in Bovesapa and the indices of other countries such as US, UK, Germany, France, Hong Kong and Japan are still on their way to recovery as of December, 2010. Only SSE Composite of China has shown very less recovery which is only 57% and may still take a long time for recovery.

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